

<110> Minchiotti, Gabriella
Persico, Maria
Parisi, Silvia

<120> METHOD FOR PROMOTING DIFFERENTIATION OF STAMINAL CELL

<130> 30242 PCT

<140> PCT/IT2004/000133

<141> 2004-03-19

<160> 42

<170> PatentIn version 3.1

<210> 1

<211> 22

<212> DNA

<213> Artificial

<220>

<221> primer_bind

<222> (1)..(22)

<223>

<400> 1

ttccttctca ggtcacgttt gc

22

<210> 2

<211> 21

<212> DNA

<213> Artificial

<220>

<221> primer_bind

<222> (1)..(21)

<223>

<400> 2

ggtggggttg gtatcgtttc a

21

<210> 3

<211> 25

<212> DNA

<213> Artificial

<220>

<221> primer_bind

<222> (1)..(25)

<223>

<400> 3

aaggatccag gctctgctgt gtgcc

25

<210> 4

persico.ST25

<211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(26)
 <223>

<400> 4
 acggatccat gtccaacctc tggcgg

26

<210> 5
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(20)
 <223>

<400> 5
 atgtgccgtg gtgtcgtggt

20

<210> 6
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(20)
 <223>

<400> 6
 gacctcctga tcagggatac

20

<210> 7
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(24)
 <223>

<400> 7
 gccagaagc ggatagaagg cggg

24

<210> 8
 <211> 24
 <212> DNA
 <213> Artificial

persico.ST25

<220>
 <221> primer_bind
 <222> (1)..(24)
 <223>

<400> 8
 ctgtggttca gggctcagtc cttc

24

<210> 9
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(24)
 <223>

<400> 9
 ggaagagtga gcggcgcatc aagg

24

<210> 10
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(22)
 <223>

<400> 10
 ctgctggaga gggtattcct cg

22

<210> 11
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(25)
 <223>

<400> 11
 cctgctggat tacattaaag cactg

25

<210> 12
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind

<222> (1)..(25)
<223>

<400> 12
cctgaagtac tcattatagt caagg

25

<210> 13
<211> 27
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(27)
<223>

<400> 13
gtaagtcgct tattaataact tgctgtc

27

<210> 14
<211> 27
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(27)
<223>

<400> 14
gacagcaagt ttaataagc gacttac

27

<210> 15
<211> 38
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(38)
<223>

<400> 15
cttgctgtct gaatggaaac acttgcaccc tgggggtcc

38

<210> 16
<211> 38
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(38)
<223>

<400> 16
ggaccccagg atgcaagtgt ttccattcag acagcaag 38

<210> 17
<211> 23
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(23)
<223>

<400> 17
gaatggaggg gcttgcattcc tgg 23

<210> 18
<211> 23
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(23)
<223>

<400> 18
ccaggatgca agccccctcca ttc 23

<210> 19
<211> 29
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(29)
<223>

<400> 19
cttgcattcct gggggccttc tgtgcctgc 29

<210> 20
<211> 29
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(29)
<223>

<400> 20
gcaggcacag aaggccccca ggatgcaag 29

<210> 21
<211> 31
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 21
gcacccctggg gtccgcctgt gcctgccctc c

31

<210> 22
<211> 31
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 22
gcacccctggg gtccgcctgt gcctgccctc c

31

<210> 23
<211> 31
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 23
gcacccctggg gtccctggtgt gcctgccctc c

31

<210> 24
<211> 31
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 24
ggagggcagg cacaccagga ccccaggatg c

31

<210> 25

<211> 32
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(32)
 <223>

<400> 25
 gtgggtctat cctcgctggc acctggctgc cc

32

<210> 26
 <211> 32
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(32)
 <223>

<400> 26
 gggcagccag gtgccagcga ggatagaccc ac

32

<210> 27
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(21)
 <223>

<400> 27
 catggcaccg ggctgccc aa g

21

<210> 28
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <221> primer_bind
 <222> (1)..(21)
 <223>

<400> 28
 cttgggcagc ccggtgccat g

21

<210> 29
 <211> 31
 <212> DNA
 <213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 29
gtgttccttg tgcgcatgct ggcacggcca g

31

<210> 30
<211> 31
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(31)
<223>

<400> 30
ctggccgtgc cagcatgctg acaggaaca c

31

<210> 31
<211> 32
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(32)
<223>

<400> 31
gctggcacgg ccagaaccac tgtcttcctc ag

32

<210> 32
<211> 32
<212> DNA
<213> Artificial

<220>
<221> primer_bind
<222> (1)..(32)
<223>

<400> 32
ctgaggaaga cagtgttct ggccgtgcca gc

32

<210> 33
<211> 171
<212> PRT
<213> Artificial

<220>
<221> VARIANT

persico.ST25

<222> (1)..(171)
<223>

<400> 33

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
1 5 10 15

Ala Phe Glu Phe Gly Pro Val Ala Gly Arg Asp Leu Ala Ile Arg Asp
20 25 30

Asn Ser Ile Trp Asp Gln Lys Glu Pro Ala Val Arg Asp Arg Ser Phe
35 40 45

Gln Phe Val Pro Ser Val Gly Ile Gln Asn Ser Lys Ser Leu Asn Lys
50 55 60

Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu Gly Ser Phe Cys Ala
65 70 75 80

Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
85 90 95

Glu His Cys Gly Ser Ile Leu His Gly Thr Trp Leu Pro Lys Lys Cys
100 105 110

Ser Leu Cys Arg Cys Trp His Gly Gln Leu His Cys Leu Pro Gln Thr
115 120 125

Phe Leu Pro Gly Cys Asp Gly His Val Met Asp Gln Asp Leu Lys Ala
130 135 140

Ser Arg Thr Pro Cys Gln Thr Pro Ser Val Thr Thr Thr Phe Met Leu
145 150 155 160

Ala Gly Ala Cys Leu Phe Leu Asp Met Lys Val
165 170

<210> 34
<211> 156
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(156)
<223>

<400> 34

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
 1 5 10 15
 Ala Phe Glu Phe Gly Pro Val Ala Gly Arg Asp Leu Ala Ile Arg Asp
 20 25 30
 Asn Ser Ile Trp Asp Gln Lys Glu Pro Ala Val Arg Asp Arg Ser Phe
 35 40 45
 Gln Phe Val Pro Ser Val Gly Ile Gln Asn Ser Lys Ser Leu Asn Lys
 50 55 60
 Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu Gly Ser Phe Cys Ala
 65 70 75 80
 Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
 85 90 95
 Glu His Cys Gly Ser Ile Leu His Gly Thr Trp Leu Pro Lys Lys Cys
 100 105 110
 Ser Leu Cys Arg Cys Trp His Gly Gln Leu His Cys Leu Pro Gln Thr
 115 120 125
 Phe Leu Pro Gly Cys Asp Gly His Val Met Asp Gln Asp Leu Lys Ala
 130 135 140
 Ser Arg Thr Pro Cys Gln Thr Pro Ser Val Thr Thr
 145 150 155

<210> 35
 <211> 166
 <212> PRT
 <213> Artificial

<220>
 <221> VARIANT
 <222> (1)..(166)
 <223>

<400> 35

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
 1 5 10 15
 Ala Phe Glu Phe Gly Pro Val Ala Gly Arg Asp Leu Ala Ile Arg Asp
 20 25 30
 Asn Ser Ile Trp Asp Gln Lys Glu Pro Ala Val Arg Asp Arg Ser Phe
 35 40 45

persico.ST25

Gln Phe Val Pro Ser Val Gly Ile Gln Asn Ser Lys Ser Leu Asn Lys
50 55 60

Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu Gly Ser Phe Cys Ala
65 70 75 80

Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
85 90 95

Glu His Cys Gly Ser Ile Leu His Gly Thr Trp Leu Pro Lys Lys Cys
100 105 110

Ser Leu Cys Arg Cys Trp His Gly Gln Leu His Cys Leu Pro Gln Thr
115 120 125

Phe Leu Pro Gly Cys Asp Gly His Val Met Asp Gln Asp Leu Lys Ala
130 135 140

Ser Arg Thr Pro Cys Gln Thr Pro Ser Val Thr Thr Thr Asn Ser Gly
145 150 155 160

His His His His His His
165

<210> 36
<211> 129
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(129)
<223>

<400> 36

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
1 5 10 15

Ala Phe Glu Phe Gly Pro Val Ala Gly Ser Val Gly Ile Gln Asn Ser
20 25 30

Lys Ser Leu Asn Lys Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu
35 40 45

Gly Ser Phe Cys Ala Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu
50 55 60

His Asp Val Arg Lys Glu His Cys Gly Ser Ile Leu His Gly Thr Trp
 65 70 75 80
 Leu Pro Lys Lys Cys Ser Leu Cys Arg Cys Trp His Gly Gln Leu His
 85 90
 Cys Leu Pro Gln Thr Phe Leu Pro Gly Cys Asp Gly His Val Met Asp
 100 105 110
 Gln Asp Leu Lys Ala Ser Arg Thr Pro Cys Gln Thr Pro Ser Val Thr
 115 120 125

Thr

<210> 37
 <211> 139
 <212> PRT
 <213> Artificial
 <220>
 <221> VARIANT
 <222> (1)..(139)
 <223>

<400> 37

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
 1 5 10 15
 Ala Phe Glu Phe Gly Pro Val Ala Gly Ser Val Gly Ile Gln Asn Ser
 20 25 30
 Lys Ser Leu Asn Lys Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu
 35 40 45
 Gly Ser Phe Cys Ala Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu
 50 55 60
 His Asp Val Arg Lys Glu His Cys Gly Ser Ile Leu His Gly Thr Trp
 65 70 75 80
 Leu Pro Lys Lys Cys Ser Leu Cys Arg Cys Trp His Gly Gln Leu His
 85 90 95
 Cys Leu Pro Gln Thr Phe Leu Pro Gly Cys Asp Gly His Val Met Asp
 100 105 110
 Gln Asp Leu Lys Ala Ser Arg Thr Pro Cys Gln Thr Pro Ser Val Thr
 115 120 125

persico.ST25

Thr Thr Asn Ser Gly His His His His His His
130 135

<210> 38
<211> 69
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(69)
<223>

<400> 38

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
1 5 10 15

Ala Phe Glu Phe Gly Pro Val Ala Gly Ser Val Gly Ile Gln Asn Ser
20 25 30

Lys Ser Leu Asn Lys Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu
35 40 45

Gly Ser Phe Cys Ala Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu
50 55 60

His Asp Val Arg Lys
65

<210> 39
<211> 96
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(96)
<223>

<400> 39

Met Gly Tyr Phe Ser Ser Ser Val Val Leu Leu Val Ala Ile Ser Ser
1 5 10 15

Ala Phe Glu Phe Gly Pro Val Ala Gly Arg Asp Leu Ala Ile Arg Asp
20 25 30

Asn Ser Ile Trp Asp Gln Lys Glu Pro Ala Val Arg Asp Arg Ser Phe
35 40 45

persico.ST25

Gln Phe Val Pro Ser Val Gly Ile Gln Asn Ser Lys Ser Leu Asn Lys
50 55 60

Thr Cys Cys Leu Asn Gly Gly Thr Cys Ile Leu Gly Ser Phe Cys Ala
65 70 75 80

Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
85 90 95

<210> 40
<211> 188
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(188)
<223>

<400> 40

Met Asp Cys Arg Lys Met Ala Arg Phe Ser Tyr Ser Val Ile Trp Ile
1 5 10 15

Met Ala Ile Ser Lys Val Phe Glu Leu Gly Leu Val Ala Gly Leu Gly
20 25 30

His Gln Glu Phe Ala Arg Pro Ser Arg Gly Tyr Leu Ala Phe Arg Asp
35 40 45

Asp Ser Ile Trp Pro Gln Glu Glu Pro Ala Ile Arg Pro Arg Ser Ser
50 55 60

Gln Arg Val Pro Pro Met Gly Ile Gln His Ser Lys Glu Leu Asn Arg
65 70 75 80

Thr Cys Cys Leu Asn Gly Gly Thr Cys Met Leu Gly Ser Phe Cys Ala
85 90 95

Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
100 105 110

Glu Asn Cys Gly Ser Val Pro His Asp Thr Trp Leu Pro Lys Lys Cys
115 120 125

Ser Leu Cys Lys Cys Trp His Gly Gln Leu Arg Cys Phe Pro Gln Ala
130 135 140

Phe Leu Pro Gly Cys Asp Gly Leu Val Met Asp Glu His Leu Val Ala

persico.ST25

145					150					155					160
Ser	Arg	Thr	Pro	Glu 165	Leu	Pro	Pro	Ser	Ala 170	Arg	Thr	Thr	Thr	Phe 175	Met
Leu	Val	Gly	Ala 180	Cys	Leu	Phe	Leu	Asp 185	Met	Lys	Val				
<210>	41														
<211>	173														
<212>	PRT														
<213>	Artificial														
<220>															
<221>	VARIANT														
<222>	(1)..(173)														
<223>															
<400>	41														
Met	Asp	Cys	Arg	Lys 5	Met	Ala	Arg	Phe	Ser 10	Tyr	Ser	Val	Ile	Trp 15	Ile
Met	Ala	Ile	Ser 20	Lys	Val	Phe	Glu	Leu 25	Gly	Leu	Val	Ala	Gly 30	Leu	Gly
His	Gln	Glu 35	Phe	Ala	Arg	Pro	Ser 40	Arg	Gly	Tyr	Leu	Ala 45	Phe	Arg	Asp
Asp	Ser 50	Ile	Trp	Pro	Gln	Glu 55	Glu	Pro	Ala	Ile	Arg 60	Pro	Arg	Ser	Ser
Gln	Arg	Val	Pro	Pro	Met 70	Gly	Ile	Gln	His	Ser 75	Lys	Glu	Leu	Asn 80	Arg
Thr	Cys	Cys	Leu	Asn 85	Gly	Gly	Thr	Cys	Met 90	Leu	Gly	Ser	Phe	Cys 95	Ala
Cys	Pro	Pro	Ser 100	Phe	Tyr	Gly	Arg	Asn 105	Cys	Glu	His	Asp	Val 110	Arg	Lys
Glu	Asn	Cys 115	Gly	Ser	Val	Pro	His 120	Asp	Thr	Trp	Leu	Pro 125	Lys	Lys	Cys
Ser	Leu 130	Cys	Lys	Cys	Trp	His 135	Gly	Gln	Leu	Arg	Cys 140	Phe	Pro	Gln	Ala
Phe	Leu	Pro	Gly	Cys	Asp 150	Gly	Leu	Val	Met	Asp 155	Glu	His	Leu	Val	Ala 160

persico.ST25

Ser Arg Thr Pro Glu Leu Pro Pro Ser Ala Arg Thr Thr
165 170

<210> 42
<211> 183
<212> PRT
<213> Artificial

<220>
<221> VARIANT
<222> (1)..(183)
<223>

<400> 42

Met Asp Cys Arg Lys Met Ala Arg Phe Ser Tyr Ser Val Ile Trp Ile
1 5 10 15

Met Ala Ile Ser Lys Val Phe Glu Leu Gly Leu Val Ala Gly Leu Gly
20 25 30

His Gln Glu Phe Ala Arg Pro Ser Arg Gly Tyr Leu Ala Phe Arg Asp
35 40 45

Asp Ser Ile Trp Pro Gln Glu Glu Pro Ala Ile Arg Pro Arg Ser Ser
50 55 60

Gln Arg Val Pro Pro Met Gly Ile Gln His Ser Lys Glu Leu Asn Arg
65 70 75 80

Thr Cys Cys Leu Asn Gly Gly Thr Cys Met Leu Gly Ser Phe Cys Ala
85 90 95

Cys Pro Pro Ser Phe Tyr Gly Arg Asn Cys Glu His Asp Val Arg Lys
100 105 110

Glu Asn Cys Gly Ser Val Pro His Asp Thr Trp Leu Pro Lys Lys Cys
115 120 125

Ser Leu Cys Lys Cys Trp His Gly Gln Leu Arg Cys Phe Pro Gln Ala
130 135 140

Phe Leu Pro Gly Cys Asp Gly Leu Val Met Asp Glu His Leu Val Ala
145 150 155 160

Ser Arg Thr Pro Glu Leu Pro Pro Ser Ala Arg Thr Thr Thr Asn Ser
165 170 175

Gly His His His His His His

180

persico.ST25